STIC Search Report
EIC 1700

STIC Database Tracking Number: 95365

TO: Daborah Chacko-Davis
Location: CP3 9D04
Art Unit : 1756
June 3, 2003

Case Serial Number: 09/912166

From: Kathleen Fuller
Location: EIC 1700
CP3/4 3D62
Phone: 308-4290

Kathleen.Fuller@uspto.gov

Search Notes

sira
Search and Information Resources Administration

Access DB# 95363

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: CHACKO-DAVIS DABORAH Examiner # : 77255 Date: 05/30/2003
Art Unit: 1756 Phone Number 306-5923 Serial Number: 09/912166
Mail Box and Bldg/Room Location: CP3-9D04 Results Format Preferred (circle): PAPER DISK E-MAIL

If mor than ne s arch is submitt d, please pri ritiz s arch s in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: "REACTIVE POLYMER COATINGS"

Inventors (please provide full names): Jorg Lahann et al.

Earliest Priority Filing Date: 07/24/2001

****For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.***

Search terms: Chemical vapor deposition.
(Coating or depositing or layering) (substrate or wafer),
structure units of attached Claim 2.

****

STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: K. Fuller	NA Sequence (#)	STN ✓
Searcher Phone #:	AA Sequence (#)	Dialog
Searcher Location:	Structure (#) 4	Questel/Orbit
Date Searcher Picked Up:	Bibliographic	Dr.Link
Date Completed: 6/2/03	Litigation	Lexis/Nexis
Searcher Prep & Review Time: 20	Fulltext	Sequence Systems
Clerical Prep Time:	Patent Family	WWW/Internet
Online Time: 57	Other	Other (specify)

PTO-1590 (8-01)

EIC1700

Search Results

Feedback Form (Optional)

Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the EIC searcher* who conducted the search *or contact*:

Kathleen Fuller, Team Leader, 308-4290, CP3/4 3D62

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example:* 1713
- *Relevant prior art found, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

  Types of relevant prior art found:
  - ☐ Foreign Patent(s)
  - ☐ Non-Patent Literature (journal articles, conference proceedings, new product announcements etc.)
- *Relevant prior art **not found**:*
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Search results were not useful in determining patentability or understanding the invention.

Other Comments:

Drop off completed forms in CP3/4 - 3D62.

```
=> FILE REG
FILE 'REGISTRY' ENTERED AT 10:21:11 ON 03 JUN 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
```


Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

```
STRUCTURE FILE UPDATES:    1 JUN 2003  HIGHEST RN 523977-56-2
DICTIONARY FILE UPDATES:   1 JUN 2003  HIGHEST RN 523977-56-2
```

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

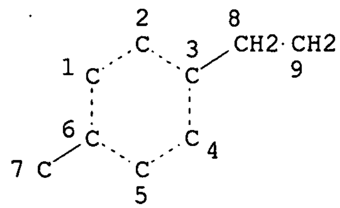
```
=> FILE HCAPLUS
FILE 'HCAPLUS' ENTERED AT 10:21:15 ON 03 JUN 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
```



```
FILE COVERS 1907 - 3 Jun 2003  VOL 138 ISS 23
FILE LAST UPDATED: 2 Jun 2003  (20030602/ED)
```

This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=>  D QUE L27
L6          12 SEA FILE=REGISTRY ABB=ON  (14533-84-7/BI OR 18931-39-0/BI OR
               25722-33-2/BI OR 31900-57-9/BI OR 359860-27-8/BI OR 374668-22-1
               /BI OR 374668-24-3/BI OR 58-85-5/BI OR 7440-21-3/BI OR
               7440-57-5/BI OR 9013-20-1/BI OR 9016-00-6/BI)
L7             STR
```



3,218 polymers with this as a structural repeating unit or a polymer monomer

NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE

```
L8             SCR 2043
L10       3218 SEA FILE=REGISTRY SSS FUL L7 AND L8
L11       2177 SEA FILE=HCAPLUS ABB=ON  L10
L12          1 SEA FILE=HCAPLUS ABB=ON  L11 AND (CVD OR CHEM? VAPOR?)
L13          6 SEA FILE=HCAPLUS ABB=ON  L11 AND VAPOR?(4A)DEPOSIT?
L15          5 SEA FILE=REGISTRY ABB=ON  L6 AND PMS/CI
L16          1 SEA FILE=REGISTRY ABB=ON  L15 AND 1/NR
L***            ANALYZE  L*** 1- RN LNK$ :      4 TERMS
L18          4 SEA FILE=REGISTRY ABB=ON  L*** OR L16
L19       1274 SEA FILE=HCAPLUS ABB=ON  L18
L20        264 SEA FILE=HCAPLUS ABB=ON  L19 AND (CVD OR CHEM? VAPOR? OR
               VAPOR?(4A)DEPOSIT?)
L21          1 SEA FILE=HCAPLUS ABB=ON  L20 AND REACT?(2A)POLYMER?(4A)COATING?

L22          9 SEA FILE=HCAPLUS ABB=ON  L20 AND REACT?(2A)POLYMER?
L***            ANALYZE  L*** 1- RN LNK$ :     484 TERMS
L23       3262 SEA FILE=REGISTRY ABB=ON  L*** OR L10
L24         44 SEA FILE=REGISTRY ABB=ON  L23 NOT L10
L25         41 SEA FILE=HCAPLUS ABB=ON  L24
L26          1 SEA FILE=HCAPLUS ABB=ON  L25 AND (CVD OR CHEM? VAPOR? OR
               VAPOR?(4A)DEPOSIT?)
L27         16 SEA FILE=HCAPLUS ABB=ON  L12 OR L13 OR L21 OR L22 OR L26
```

=> D L27 ALL 1-16 HITSTR

```
L27  ANSWER 1 OF 16  HCAPLUS  COPYRIGHT 2003 ACS
AN   2003:241826  HCAPLUS
DN   138:256622
```
TI   Particles with **vapor deposition** coating
```
IN   Klinedinst, Keith A.; Kazazis, Christoforos; Carril, Daniel
PA   USA
SO   U.S. Pat. Appl. Publ., 22 pp.
     CODEN: USXXCO
DT   Patent
LA   English
IC   ICM  B32B005-02
NCL  428403000; 422139000; 427212000
CC   42-2 (Coatings, Inks, and Related Products)
```

Section cross-reference(s): 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003059615	A1	20030327	US 2001-965494	20010927
PRAI	US 2001-965494		20010927		

AB A new fluidized bed particle coating method is disclosed by the use of which coatings can be uniformly and conveniently deposited on the surfaces of fluidized particulate materials by **vapor deposition** processes at temps. lower than those of the heated coating precursor transport lines. By this method, particle materials with relatively low surface temps. may be brought into close proximity with a coating precursor contg. gas stream characterized by a substantially higher gas vol. temp. in such a way that the vaporized precursor mols. are caused to adsorb or condense on the relatively cold particle surfaces without also condensing on any other surface. Further, if the adsorbed precursor mols. are capable of **reacting** or **polymg**. on the relatively cold particle surfaces, thus forming substantially continuous coatings on those surfaces, they may do so without also depositing such coatings on any other surfaces. Such coating deposition processes cannot be carried out using conventional fluidized bed deposition methods or equipment. The processes are useful for deposition of electroluminescent phosphor of fluorescent lamp, etc.

ST fluidized bed particle **vapor deposition** coating process

IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(coating; particles with **vapor deposition** coating attained by fluidized bed coating process)

IT Fluidized beds
Fluorescent lamps
Phosphors
Vapor deposition process
(particles with **vapor deposition** coating attained by fluidized bed coating process)

IT 9055-86-1, Dichloro(2,2)paracyclophane homopolymer 59158-39-3, Phenylenediamine-terephthalic acid copolymer 70357-19-6 174543-92-1, Decamethylenediamine-pyromellitic acid copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(coating, assumed monomers; particles with **vapor deposition** coating attained by fluidized bed coating process)

IT 101-80-4D, 4,4'-Diaminodiphenyl ether, polymers 9002-88-4, Polyethylene 24937-79-9, Poly(vinylidene fluoride) 24938-74-7, Poly(decamethylene terephthalamide) sru **25722-33-2**, Poly(p-xylylene) **26591-48-0**, (2,2)Paracyclophane homopolymer 42208-67-3, Polyaminoborane 51325-05-4, Poly(2,5-thienylene) 56802-83-6, Poly(phenylene terephthalamide) 116000-50-1, Poly(2,2'-bipyridine-5,5'-diyl) 352707-03-0, Poly(2,5-pyridinediyl)
RL: TEM (Technical or engineered material use); USES (Uses)
(coating; particles with **vapor deposition** coating attained by fluidized bed coating process)

IT 1314-98-3, Zinc sulfide, uses 7440-50-8, Copper, uses
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(electroluminescent phosphors; particles with **vapor deposition** coating attained by fluidized bed coating process)

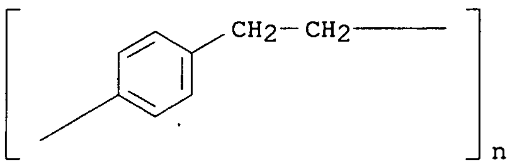
IT 25190-62-9, Poly(p-phenylene)
RL: TEM (Technical or engineered material use); USES (Uses)

(particles with **vapor deposition** coating attained by fluidized bed coating process)

IT **25722-33-2**, Poly(p-xylylene) **26591-48-0**, (2,2)Paracyclophane homopolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(coating; particles with **vapor deposition** coating attained by fluidized bed coating process)

RN 25722-33-2 HCAPLUS

CN Poly(1,4-phenylene-1,2-ethanediyl) (9CI) (CA INDEX NAME)

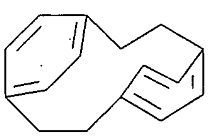


RN 26591-48-0 HCAPLUS

CN Tricyclo[8.2.2.24,7]hexadeca-4,6,10,12,13,15-hexaene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1633-22-3
CMF C16 H16



L27 ANSWER 2 OF 16 HCAPLUS COPYRIGHT 2003 ACS
AN 2003:241795 HCAPLUS
DN 138:262484
TI Method of coating electroluminescent phosphor particles by **vapor deposition**
IN Klinedinst, Keith A.; Kazazis, Christoforos; Carril, Daniel
PA USA
SO U.S. Pat. Appl. Publ., 22 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C23C016-00
ICS B05D007-00
NCL 427212000; 427255280; 427255600
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 75
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003059530	A1	20030327	US 2001-965497	20010927

EP 1298182 A2 20030402 EP 2002-20315 20020911
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK
PRAI US 2001-965497 A 20010927

AB A new fluidized bed particle coating method is disclosed using which coatings can be uniformly and conveniently deposited on the surfaces of fluidized particulate materials by **vapor deposition** processes at temps. lower than those of the heated coating precursor transport lines. By this method, particle materials with relatively low surface temps. may be brought into close proximity with a coating precursor contg. gas stream characterized by a substantially higher gas vol. temp. in such a way that the vaporized precursor mols. are caused to adsorb or condense on the relatively cold particle surfaces without also condensing on any other surface. Further, if the adsorbed precursor mols. are capable of **reacting** or **polymg.** on the relatively cold particle surfaces, thus forming substantially continuous coatings on those surfaces, they may do so without also depositing such coatings on any other surfaces. Such coating deposition processes cannot be carried out using conventional fluidized bed deposition methods or equipment.

ST fluidized bed particle coating **vapor deposition**; electroluminescent phosphor particle coating **vapor deposition**

IT Polyamides, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(aliph., coating material; method of coating particles by **vapor deposition**)

IT Alkanes, uses
Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(coating material; method of coating particles by **vapor deposition**)

IT Phosphors
(electroluminescent; method of coating phosphor particles by **vapor deposition**)

IT **Vapor deposition** process
(method of coating particles by **vapor deposition**)

IT Polymerization
(**vapor-deposition**; method of coating particles by)

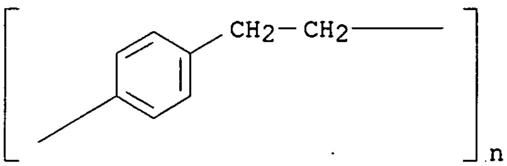
IT Coating materials
(water-resistant; method of coating particles by **vapor deposition**)

IT 101-80-4, 4,4'-Diaminodiphenyl ether 1633-22-3, (2,2)Paracyclophane 7154-31-6 9002-88-4, Polyethylene 10366-05-9 24937-79-9, Poly(vinylidene fluoride) 24938-11-2 24938-74-7 25190-62-9, Poly(p-phenylene) **25722-33-2**, Poly(p-xylylene) 42208-67-3, Poly aminoborane 51325-05-4, Poly(2,5-thienylene) 56815-38-4 60507-51-9 67987-55-7, Poly(pyridinediyl) 116000-50-1, Poly(2,2'-bipyridine-5,5'-diyl) 149531-18-0
RL: TEM (Technical or engineered material use); USES (Uses)
(coating material; method of coating particles by **vapor deposition**)

IT 1314-98-3, Zinc sulfide, uses 7440-50-8, Copper, uses
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(phosphor; method of coating phosphor particles by **vapor deposition**)

IT **25722-33-2**, Poly(p-xylylene)

RL: TEM (Technical or engineered material use); USES (Uses)
(coating material; method of coating particles by **vapor deposition**)
RN 25722-33-2 HCAPLUS
CN Poly(1,4-phenylene-1,2-ethanediyl) (9CI) (CA INDEX NAME)



L27 ANSWER 3 OF 16 HCAPLUS COPYRIGHT 2003 ACS
AN 2003:97567 HCAPLUS
DN 138:133520
TI **Reactive polymer coatings** including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays
IN Lahann, Joerg; Langer, Robert; Jensen, Klavs F.

applicants

PA Massachusetts Institute of Technology, USA
SO PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C23C016-00
CC 9-16 (Biochemical Methods)
Section cross-reference(s): 3, 38
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003010354	A2	20030206	WO 2002-US23259	20020723

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	US 2003044546	A1	20030306	US 2001-912166	20010724
PRAI	US 2001-912166	A	20010724		

AB A method for coating of variable substrates with highly **reactive polymers**. Its combination with microcontact printing is used for generating several devices such as patterned arrays of ligands for high throughput screening.
ST **reactive polymer coating** xylylene carboxylate pentafluorophenolester xylylene copolymer microarray
IT Animal tissue culture
(bovine aortic endothelial; **reactive polymer coatings** including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)
IT **Vapor deposition** process

(chem.; **reactive polymer coatings**
including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

IT Transparency
(intransparency; **reactive polymer coatings**
including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

IT Analytical apparatus
(microfluidic; **reactive polymer coatings**
including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

IT Antibodies
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(monoclonal, biotin-conjugated; **reactive polymer coatings** including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

IT **Coating** materials
DNA microarray technology
High throughput screening
Immobilization, molecular
Microstructure
Photolithography
Protein microarray technology
Thickness
(**reactive polymer coatings** including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

IT Polyolefins
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(**reactive polymer coatings** including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

IT DNA
Oligonucleotides
Peptides, analysis
Polysaccharides, analysis
Proteins
RL: ARU (Analytical role, unclassified); DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); ANST (Analytical study); PROC (Process); USES (Uses)
(**reactive polymer coatings** including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

IT Electrophoresis apparatus
(surface property enhancement of; **reactive polymer coatings** including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

IT Plasma
(treatment; **reactive polymer coatings**
including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

IT 9013-20-1, Streptavidin
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(**reactive polymer coatings** including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

IT **25722-33-2**, Poly(p-xylylene)

RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(**reactive polymer coatings** including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

IT 58-85-5, Biotin 359860-27-8
RL: ARU (Analytical role, unclassified); DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); ANST (Analytical study); PROC (Process); USES (Uses)
(**reactive polymer coatings** including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

IT 374668-24-3P
RL: ARU (Analytical role, unclassified); DEV (Device component use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(**reactive polymer coatings** including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

IT 7440-21-3, Silicon, uses 7440-57-5, Gold, uses 9016-00-6, Poly[oxy(dimethylsilylene)] 31900-57-9, PDMS
RL: DEV (Device component use); USES (Uses)
(**reactive polymer coatings** including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

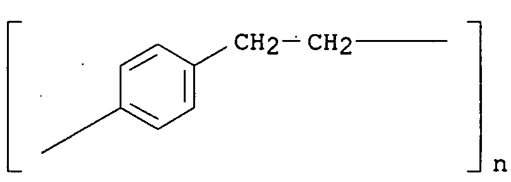
IT 14533-84-7 18931-39-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(**reactive polymer coatings** including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

IT 374668-22-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**reactive polymer coatings** including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

IT **25722-33-2**, Poly(p-xylylene)
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(**reactive polymer coatings** including poly[p-xylylene carboxylic acid pentafluorophenolester-co-p-xylylene] and use for microarrays)

RN 25722-33-2 HCAPLUS

CN Poly(1,4-phenylene-1,2-ethanediyl) (9CI) (CA INDEX NAME)



L27 ANSWER 4 OF 16 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:851056 HCAPLUS

DN 135:366084

TI Use of **vapor-deposited** conformal coatings in microfluidic structures
IN Sheppard, Norman F., Jr.; Carvalho, Bruce
PA Tecan Trading A.-G, Switz.
SO PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM B81C001-00
ICS B32B031-00; B01J019-00; B01L003-00
CC 79-2 (Inorganic Analytical Chemistry)
Section cross-reference(s): 3, 9, 80
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001087768	A2	20011122	WO 2001-US15805	20010515
	WO 2001087768	A3	20020418		

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	US 2002050456	A1	20020502	US 2001-858313	20010515
	EP 1284921	A2	20030226	EP 2001-935576	20010515

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRAI US 2000-204299P P 20000515
WO 2001-US15805 W 20010515

AB This invention relates to methods and app. for performing microanalytic and microsynthetic analyses and procedures. The invention particularly provides microsystem platforms comprising microfluidics components wherein the interior surfaces of the components comprise a conformal coating of parylene.

ST **vapor deposited** conformal coating microfluidic structure
IT Air
(Ambient; use of **vapor-deposited** conformal coatings in microfluidic structures)
IT Analytical apparatus
(Microfluidic structures; use of **vapor-deposited** conformal coatings in microfluidic structures)
IT Analysis
(Microsynthetic; use of **vapor-deposited** conformal coatings in microfluidic structures)
IT Analysis
(biochem.; use of **vapor-deposited** conformal coatings in microfluidic structures)
IT Laboratory ware
(manifolds; use of **vapor-deposited** conformal coatings in microfluidic structures)
IT Ventilation, mechanical
(systems; use of **vapor-deposited** conformal coatings in microfluidic structures)
IT Adhesive tapes

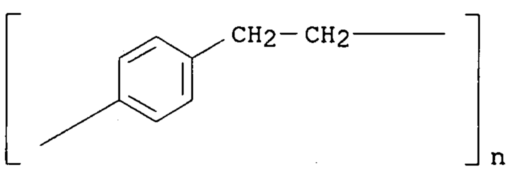
Coating materials
Fluids
Interface
Microanalysis
PCR (**polymerase** chain **reaction**)
Sealing
Vapor deposition process
(use of **vapor-deposited** conformal coatings in microfluidic structures)

IT 9011-14-7, PMMA
RL: DEV (Device component use); USES (Uses)
(use of **vapor-deposited** conformal coatings in microfluidic structures)

IT **25722-33-2**, Parylene
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(use of **vapor-deposited** conformal coatings in microfluidic structures)

IT **25722-33-2**, Parylene
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(use of **vapor-deposited** conformal coatings in microfluidic structures)

RN 25722-33-2 HCAPLUS
CN Poly(1,4-phenylene-1,2-ethanediyl) (9CI) (CA INDEX NAME)



L27 ANSWER 5 OF 16 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:520459 HCAPLUS
DN 135:324953
TI Investigation of organic light-emitting devices using boron-doped diamond electrodes
AU Wang, W. L.; Liao, K. J.; Zhang, R. Q.; Kong, C. Y.
CS Department of Applied Physics, Chongqing University, Chonqging, 400044, Peop. Rep. China
SO Materials Science & Engineering, B: Solid-State Materials for Advanced Technology (2001), B85(2-3), 169-171
CODEN: MSBTEK; ISSN: 0921-5107
PB Elsevier Science S.A.
DT Journal
LA English
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
AB Org. light-emitting devices with diamond electrodes have been investigated by SEM in conjunction with light emission spectra. The diamond films were prepd. by hot filament **chem. vapor deposition**. Heavily boron-doped diamond films were achieved by introducing trimethylborate during diamond growth process. The light-emitting layers

consist of ladder-type poly(p-phenylene) with hole transport properties and tris-(8-hydroxyquinoline) aluminum as the electron transport material. The exptl. studies show that the stability of the org. light emitting devices with diamond electrodes is greatly improved in comparison with devices using metal electrodes.

ST stability org light emitting device boron doped diamond electrode; OLED stability boron doped diamond electrode

IT Surface structure
(SEM electrode image; improved stability of org. light-emitting devices using boron-doped diamond electrodes compared with devices using metal electrodes)

IT Bias potential
(changes in; improved stability of org. light-emitting devices using boron-doped diamond electrodes compared with devices using metal electrodes)

IT Electrodes
(effect of; improved stability of org. light-emitting devices using boron-doped diamond electrodes compared with devices using metal electrodes)

IT Ladder polymers
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(improved stability of org. light-emitting devices using boron-doped diamond electrodes compared with devices using metal electrodes)

IT Electroluminescent devices
(thin-film, org.; improved stability of org. light-emitting devices using boron-doped diamond electrodes compared with devices using metal electrodes)

IT 7440-42-8, Boron, properties
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(dopant; improved stability of org. light-emitting devices using boron-doped diamond electrodes compared with devices using metal electrodes)

IT 7429-90-5, Aluminum, properties 7440-57-5, Gold, properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(electrode; improved stability of org. light-emitting devices using boron-doped diamond electrodes compared with devices using metal electrodes)

IT 2085-33-8, Alq3
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(electron-transporting layer; improved stability of org. light-emitting devices using boron-doped diamond electrodes compared with devices using metal electrodes)

IT 7782-40-3, Diamond, properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(film, electrode; improved stability of org. light-emitting devices using boron-doped diamond electrodes compared with devices using metal electrodes)

IT 25190-62-9D, Poly(1,4-phenylene), Me-subsutd. **142207-12-3**
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(hole-transporting layer; improved stability of org. light-emitting devices using boron-doped diamond electrodes compared with devices using metal electrodes)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD

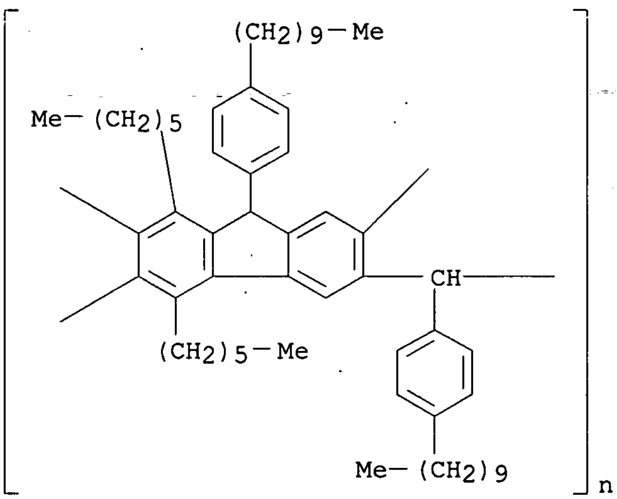
RE
(1) Abkowitz, M; Philos Mag 1993, VB175, P15
(2) Aziz, H; Synthet Met 1996, V80, P7 HCAPLUS
(3) Burrows, P; Appl Phys Lett 1994, V65, P2922 HCAPLUS

(4) Cimrova, V; Appl Phys Lett 1996, V69, P608 HCAPLUS
(5) Cimrova, V; Synth Met 1994, V67, P103 HCAPLUS
(6) Dodabalagur, A; Science 1995, V268, P270
(7) Hamada, Y; Jpn J Appl Phys 1992, V31, P1812 HCAPLUS
(8) Liao, K; Acta Phys Sin 1998, V47, P514 HCAPLUS
(9) Scherf, V; Makromol Chem 1991, V12, P489
(10) Tang, C; Appl Phys Lett 1987, V51, P913 HCAPLUS

IT **142207-12-3**
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(hole-transporting layer; improved stability of org. light-emitting devices using boron-doped diamond electrodes compared with devices using metal electrodes)

RN 142207-12-3 HCAPLUS

CN Poly[[9-(4-decylphenyl)-1,4-dihexyl-9H-fluorene-2,3:6,7-tetrayl]-6-[(4-decylphenyl)methylene]] (9CI) (CA INDEX NAME)



L27 ANSWER 6 OF 16 HCAPLUS

AN 2000:687928 HCAPLUS
DN 133:253483
TI Method and apparatus forming low dielectric constant polymeric films
IN Xu, Chongying; Baum, Thomas H.; Carl, Ralph J.; Sturm, Edward A.
PA Advanced Technology Materials, Inc., USA
SO U.S., 15 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM C23C016-448
NCL 427255600
CC 38-2 (Plastics Fabrication and Uses)
Section cross-reference(s): 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6123993	A	20000926	US 1998-157966	19980921
	US 6331211	B1	20011218	US 2000-635866	20000810
PRAI	US 1998-157966	A3	19980921		

AB Forming a low dielec. const. polymeric film on a substrate, comprises liq.

delivery of a parylene precursor reagent (as an org. soln. or a neat liq.) to a substrate, subsequent flash vaporization of the neat liq. or org. soln., pyrolytic cracking of the precursor to form the reactive monomer and/or reactive radical species, and condensation and polymn. of the monomer and/or reactive radical species to form a low dielec. const. polymeric film on the substrate. The low dielec. const. polymeric film may comprise a parylene film, formed from a precursor such as [2.2]-paracyclophane, an alkyl- and/or halo-substituted deriv., or an analogous compd. of a p-xylene deriv., on Si wafer. An FTIR spectrum was obtained for a thin film deposited from a THF soln. of [2.2]-paracyclophane after thermal transport, in-situ cracking at 700.degree., and condensation/**polymn.** of the **reactive** monomers at -20.degree..

ST **CVD** liq delivery vaporization method app dielec film

IT **Vapor deposition** process
(**chem.**; **vapor deposition** of paracyclophane forming low dielec. const. polymeric films)

IT Dielectric films
(interlayer; **vapor deposition** of paracyclophane forming low dielec. const. polymeric films)

IT **Vapor deposition** apparatus
(**vapor deposition** of paracyclophane forming low dielec. const. polymeric films)

IT Poly(arylenealkylenes)
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**vapor deposition** of paracyclophane forming low dielec. const. polymeric films)

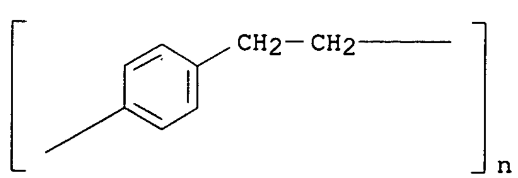
IT **25722-33-2P**, Parylene N **26591-48-0P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**vapor deposition** of paracyclophane forming low dielec. const. polymeric films)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Affinito; US 5902641 1999 HCAPLUS
(2) Chow; J Appl Polymer Sci 1969, V13, P2325 HCAPLUS
(3) Gorharn; J Polymer Sci, Part A-1 1969, V19, P3027
(4) Hinkle; US 5966499 1999 HCAPLUS
(5) Sivaramakrishnam; US 5958510 1999 HCAPLUS
(6) You; US 5268202 1993 HCAPLUS

IT **25722-33-2P**, Parylene N **26591-48-0P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**vapor deposition** of paracyclophane forming low dielec. const. polymeric films)

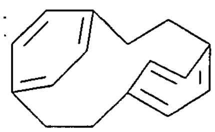
RN 25722-33-2 HCAPLUS
CN Poly(1,4-phenylene-1,2-ethanediyl) (9CI) (CA INDEX NAME)



RN 26591-48-0 HCAPLUS
CN Tricyclo[8.2.2.24,7]hexadeca-4,6,10,12,13,15-hexaene, homopolymer (9CI)
(CA INDEX NAME)

CM 1

CRN 1633-22-3
CMF C16 H16



L27 ANSWER 7 OF 16 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:439374 HCAPLUS
DN 131:66555
TI Low capacitance interconnect structure for integrated circuits using
decomposed polymers
IN Jeng, Shin-puu
PA Texas Instruments Incorporated, USA
SO U.S., 8 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM H01L029-00
NCL 257522000
CC 76-3 (Electric Phenomena)
Section cross-reference(s): 38
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5923074	A	19990713	US 1996-758320	19961203
PRAI	US 1996-758320		19961203		

AB A low capacitance interconnect structure and process is provided for integrating low-k decompd. polymers into integrated circuit structures and processes, esp. those requiring multiple levels of interconnect lines, for reduced capacitance over prior art structures. Embodiments of the present invention use polymers which typically decomp. into gases with lower dielec. coeffs. than the original polymer to provide a lower dielec. const. material between conductive interconnects on an integrated circuit. The materials are decompd. after being sealed in with a cap layer to prevent contamination of the gas filled void left after decompn. The present invention also combines the advantages of SiO2 with low dielec. decompd. polymers by placing the low decompd. material only between tightly spaced lines. The low-k polymer material can be applied by spin-on techniques or by **vapor deposition**.
ST polymer decompn dielec film interconnect integrated circuit
IT Fluoropolymers, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(amorphous; low capacitance interconnect structure for integrated circuits using decompd. polymers)
IT Polyimides, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)

(fluorine-contg.; low capacitance interconnect structure for integrated circuits using decompd. polymers)

IT Aerogels
Dielectric films
Integrated circuits
Interconnections (electric)
Polymer degradation
Vapor deposition process
Xerogels
(low capacitance interconnect structure for integrated circuits using decompd. polymers)

IT Plastic foams
Polyimides, reactions
Polymers, reactions
Silsesquioxanes
RL: RCT (Reactant); RACT (Reactant or reagent)
(low capacitance interconnect structure for integrated circuits using decompd. polymers)

IT Fluoropolymers, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(polyimide-; low capacitance interconnect structure for integrated circuits using decompd. polymers)

IT Coating process
(spin; low capacitance interconnect structure for integrated circuits using decompd. polymers)

IT 9002-84-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(amorphous; low capacitance interconnect structure for integrated circuits using decompd. polymers)

IT 7631-86-9, Silica, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(low capacitance interconnect structure for integrated circuits using decompd. polymers)

IT 9052-19-1, Parylene C 25135-16-4, Polynaphthalene 25669-37-8, Parylene F **25722-33-2**, Parylene N 139196-38-6, Polybenzocyclobutene
RL: RCT (Reactant); RACT (Reactant or reagent)
(low capacitance interconnect structure for integrated circuits using decompd. polymers)

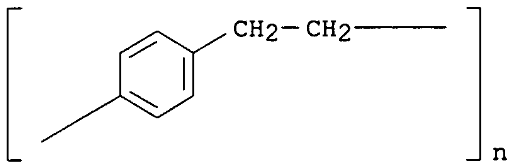
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Castleberry; US 5489551 1996 HCAPLUS
(2) Cheung; US 5693566 1997 HCAPLUS
(3) Cummings; US 4336320 1982 HCAPLUS
(4) Kobayashi; US 5602060 1997 HCAPLUS
(5) Maruyama; US 4750070 1988

IT **25722-33-2**, Parylene N
RL: RCT (Reactant); RACT (Reactant or reagent)
(low capacitance interconnect structure for integrated circuits using decompd. polymers)

RN 25722-33-2 HCAPLUS

CN Poly(1,4-phenylene-1,2-ethanediyl) (9CI) (CA INDEX NAME)

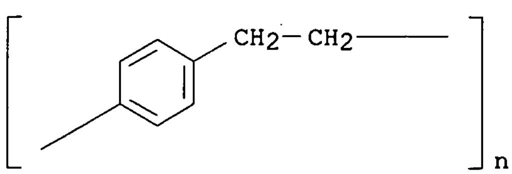


L27 ANSWER 8 OF 16 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:438639 HCAPLUS
DN 131:258553
TI **Vapor deposition polymerization** and **reactive** ion beam etching of poly(p-xylylene) films for waveguide applications
AU Ratier, Bernard; Jeong, Yong Seok; Moliton, Andre; Audebert, Pierre
CS UMOP, University of Limoges, Limoges, 87060, Fr.
SO Optical Materials (Amsterdam) (1999), 12(2/3), 229-233
CODEN: OMATET; ISSN: 0925-3467
PB Elsevier Science B.V.
DT Journal
LA English
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 37, 73
AB **Vapor deposition** polymn. (VDP) of Parylene-n and Parylene-c films was studied in terms of the initial evapd. monomer mass: controlled and homogeneous film thicknesses are obtained provided that the vapor flow is low. In order to use these materials for ribbon waveguide applications, reactive ion beam etching of the films has been tried, giving very low etching speed.
ST ion beam etching polyxylylene waveguide; **vapor deposition** polymn polyxylylene; polyarylenealkylene **vapor deposition** polymn
IT Sputtering
Sputtering
(etching, ion-beam; **vapor deposition polymn** . and **reactive** ion beam etching of poly(p-xylylene) films for waveguide applications)
IT Etching
Etching
(sputter, ion-beam; **vapor deposition polymn** . and **reactive** ion beam etching of poly(p-xylylene) films for waveguide applications)
IT Bands and Ribbons
Waveguides
(**vapor deposition polymn**. and **reactive** ion beam etching of poly(p-xylylene) films for waveguide applications)
IT Glass, uses
RL: NUU (Other use, unclassified); USES (Uses)
(**vapor deposition polymn**. and **reactive** ion beam etching of poly(p-xylylene) films for waveguide applications)
IT Poly(arylenealkylenes)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(**vapor deposition polymn**. and **reactive** ion beam etching of poly(p-xylylene) films for

waveguide applications)
IT Polymerization
(**vapor-deposition; vapor deposition polymn.** and **reactive** ion beam etching of poly(p-xylylene) films for waveguide applications)
IT 7429-90-5, Aluminum, uses 7440-21-3, Silicon, uses 7782-44-7, Oxygen, uses
RL: NUU (Other use, unclassified); USES (Uses)
(**vapor deposition polymn.** and **reactive** ion beam etching of poly(p-xylylene) films for waveguide applications)
IT 9052-19-1P, Parylene C 9055-86-1P, Dichloro-p-cyclophane polymer **25722-33-2P**, Parylene-n **26591-48-0P**, Poly[2.2]paracyclophane
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(**vapor deposition polymn.** and **reactive** ion beam etching of poly(p-xylylene) films for waveguide applications)
RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Gaynor, J; J Mater Res 1994, V9(12), P3125 HCAPLUS
(2) Gaynor, J; J Mater Res 1996, V11(1), P236 HCAPLUS
(3) Gorham, W; J Polym Sci Part A-1 1966, V4, P3027 HCAPLUS
(4) Harper, J; J Vac Sci and Technol 1982, V21, P737 HCAPLUS
(5) Kubo, S; J Poly Sci 1972, V10, P1949 HCAPLUS
(6) Lucas, B; to be published in J Polym Inter
(7) Majid, N; J Electronic Mater 1989, V18(2), P301 HCAPLUS
(8) Niegisch, W; Encyclopedia of Polymer Science and Technology 1971, V15, P98
(9) Senkevich, J; Appl Phys Lett 1998, V72(2), P258 HCAPLUS
(10) Taylor, K; Microelectronic Eng 1997, V37/38, P255 HCAPLUS
(11) Tkach, J; Polyimides: Synthesis Characterization and Applications 1984, V2, P827
(12) Ziegler, J; The Stopping and Range of Ions in Solids 1985

IT **25722-33-2P**, Parylene-n **26591-48-0P**, Poly[2.2]paracyclophane
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(**vapor deposition polymn.** and **reactive** ion beam etching of poly(p-xylylene) films for waveguide applications)
RN 25722-33-2 HCAPLUS
CN Poly(1,4-phenylene-1,2-ethanediyl) (9CI) (CA INDEX NAME)

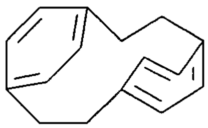


RN 26591-48-0 HCAPLUS
CN Tricyclo[8.2.2.24,7]hexadeca-4,6,10,12,13,15-hexaene, homopolymer (9CI) (CA INDEX NAME)

CM 1

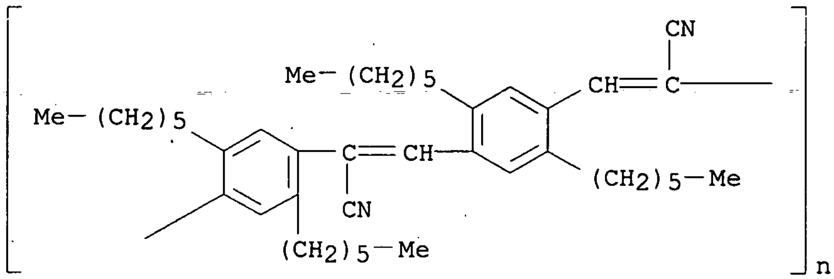
CRN 1633-22-3

CMF C16 H16



L27 ANSWER 9 OF 16 HCAPLUS COPYRIGHT 2003 ACS
AN 1998:119602 HCAPLUS
DN 128:198163
TI Tuning of Fluorescence in Films and Nanoparticles of Oligophenylenevinylenes
AU Oelkrug, Dieter; Tompert, Alfred; Gierschner, Johannes; Egelhaaf, Hans-Joachim; Hanack, Michael; Hohloch, Michael; Steinhuber, Elke
CS Institute of Physical Chemistry, University of Tuebingen, Tuebingen, D-72076, Germany
SO Journal of Physical Chemistry B (1998), 102(11), 1902-1907
CODEN: JPCBFK; ISSN: 1089-5647
PB American Chemical Society
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB Oligophenylenevinylenes (OPV) with distance-controlling, electron-donating, and/or electron-withdrawing substituents are **deposited** from **vapor** phase and soln. as ultrathin films or nanoparticles with diams. of 20-200 nm. In some cases the systems are doped at levels of 10-5-10-3 with energy accepting OPV's of longer chain lengths. Absorption and fluorescence spectra, steady-state and time-resolved anisotropies, and radiative and nonradiative deactivation rates of these systems were studied and compared to the corresponding properties in dil. solns. Fluorescence yields of the parent oligomers and their alkyl or oxyalkyl derivs. are high in soln. with an infinite chain limit of .PHI.F .apprxeq. 0.5 and an upper radiative rate const. limit of kr.infin. = (1 .+-. 0.3) .times. 109 s-1. Yields and kr decrease strongly in films and nanoparticles because of H-aggregate formation. However, doping with fluorescent acceptors can increase the yields up to .PHI.F .fwdarw. 0.7. Introduction of electron-withdrawing -CN and -SO2CF3 substituents reduces .PHI.F in low viscous dil. solns. almost to zero. High viscosities and condensation to solid phases will raise the yields up to .PHI.F .fwdarw. 0.6 because of suppression of nonradiative torsional deactivation and formation of J-aggregates with high kr.
ST tuning fluorescence film nanoparticle oligophenylenevinylene
IT Aggregates
(hydrogen-bond; tuning of fluorescence in films and nanoparticles of oligophenylenevinylenes)
IT Energy level
Energy transfer
Films
Fluorescence
Hydrogen bond
Nanoparticles
Optical absorption
Solvent effect

Substituent effects
(tuning of fluorescence in films and nanoparticles of oligophenylenevinylenes)
IT 1608-30-6 188904-47-4 188904-49-6 188904-51-0 188904-52-1
188904-53-2 **188908-20-5** 201135-83-3 201135-84-4
RL: PRP (Properties)
(tuning of fluorescence in films and nanoparticles of oligophenylenevinylenes)
IT **188908-20-5**
RL: PRP (Properties)
(tuning of fluorescence in films and nanoparticles of oligophenylenevinylenes)
RN 188908-20-5 HCAPLUS
CN Poly[(2,5-dihexyl-1,4-phenylene)(1-cyano-1,2-ethenediyl)(2,5-dihexyl-1,4-phenylene)(2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



L27 ANSWER 10 OF 16 HCAPLUS COPYRIGHT 2003 ACS
AN 1998:53971 HCAPLUS
DN 128:89360
TI Tuning of fluorescence in films and nanoparticles of oligo-phenylenevinylenes
AU Oelkrug, D.; Tompert, A.; Gierschner, J.; Egelhaaf, H. -J.; Hanack, M.; Hohloch, M.; Steinhuber, E.
CS Institute of Physical Chemistry, University of Tubingen, Tubingen, D-72076, Germany
SO Proceedings of SPIE-The International Society for Optical Engineering (1997), 3145(Optical Probes of Conjugated Polymers), 242-253
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 36-5 (Physical Properties of Synthetic High Polymers)
AB Oligo-phenylenevinylenes (OPV) with a series of distance controlling, electron donating, and/or electron withdrawing substituents are **deposited** from **vapor** phase and soln. as ultrathin films or nanoparticles with diams. of 20-200 nm. In some cases the systems are doped at levels of 10-5-10-3 with energy accepting OPV's of longer chain lengths. Absorption and fluorescence spectra, steady-state and time-resolved anisotropies, radiative and nonradiative deactivation rates of these systems are investigated and compared to the corresponding properties in dil. solns. Fluorescence yields of the parent oligomers and their alkyl or oxyalkyl derivs. are high in soln. with an infinite chain limit of .PHI.F .apprxeq. 0.5 and an upper radiative rate const. limit of kr.infin. = (1 .+-. 0.3) .cntdot. 109 s-1. Yields and kr decrease

strongly in films and nanoparticles because of H-aggregate formation. However, doping with fluorescent acceptors can increase the yields up to .PHI.F .fwdarw. 0.7. Introduction of electron withdrawing -CN and -SO2CF3 substituents reduces .PHI.F in low viscous dil. solns. almost to zero. High viscosities and condensation to solid phases will rise the yields up to .PHI.F .fwdarw. 0.6 because of suppression of nonradiative torsional deactivation and formation of J-aggregates with high kr.

ST fluorescence tuning polyphenylenevinylene oligomer film nanoparticle

IT Poly(arylenealkenylenes)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(oligomeric; tuning of fluorescence in films and nanoparticles of oligo-phenylenevinylenes)

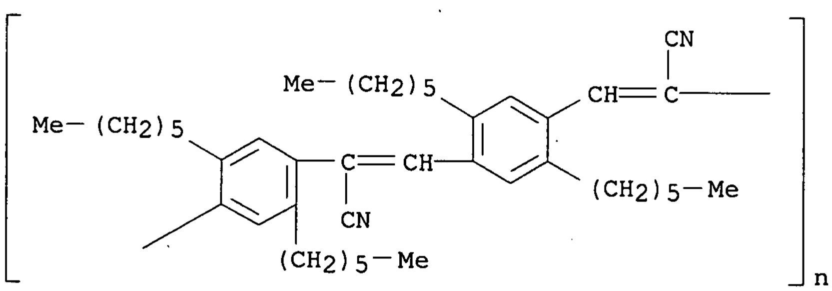
IT Fluorescence
Luminescence
Substituent effects
UV and visible spectra
(tuning of fluorescence in films and nanoparticles of oligo-phenylenevinylenes)

IT 1608-30-6, 1,4-Bis(2-phenylethenyl)benzene 188904-47-4 188904-49-6 188904-51-0 188904-52-1 188904-53-2 188908-06-7 **188908-20-5** 201135-83-3 201135-84-4 201135-85-5
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(tuning of fluorescence in films and nanoparticles of oligo-phenylenevinylenes)

IT **188908-20-5**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(tuning of fluorescence in films and nanoparticles of oligo-phenylenevinylenes)

RN 188908-20-5 HCAPLUS

CN Poly[(2,5-dihexyl-1,4-phenylene)(1-cyano-1,2-ethenediyl)(2,5-dihexyl-1,4-phenylene)(2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



L27 ANSWER 11 OF 16 HCAPLUS COPYRIGHT 2003 ACS

AN 1996:428211 HCAPLUS

DN 125:71314

TI Manufacture of nonlinear optical laminate

IN Kuhata, Mitsuru; Hatsutori, Yasuhiro; Uemya, Takafumi

PA Sumitomo Electric Industries, Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF

DT Patent

LA Japanese
IC ICM G02F001-35
ICS G02F001-35
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 21
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08095099	A2	19960412	JP 1994-231798	19940927
PRAI	JP 1994-231798		19940927		

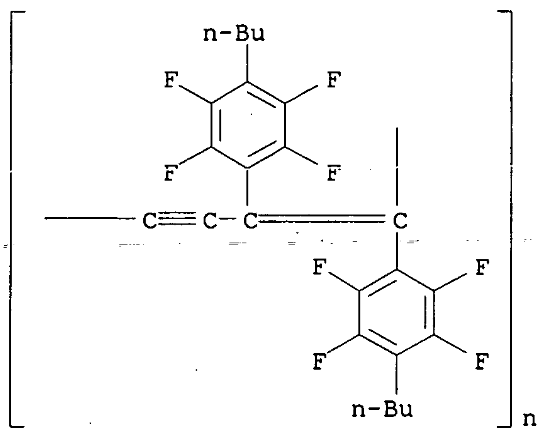
AB The manuf. comprises these steps; (1)forming a 3-100 nm thick film of an org. nonlinear optical material on a substrate, (2)forming metal particles(.ltoreq.100 nm diam.) on the org. nonlinear film, (3)embedding the metal particles in other layer of the org. nonlinear optical material, and repeating the step (2) and (3) to form the nonlinear optical laminate in which the metal particles are dispersed in the continuous phase of the nonlinear optical material.
ST org nonlinear optical laminate metal particle; metal dispersed org nonlinear optical laminate; dip coating **vapor deposition** nonlinear optical; polydiacetylene optical nonlinear metal dispersed
IT **Vapor deposition** processes
(manuf. of metal-dispersed org. nonlinear optical laminate)
IT Coating process
(dip, manuf. of metal-dispersed org. nonlinear optical laminate)
IT Optical materials
(nonlinear, manuf. of metal-dispersed org. nonlinear optical laminate)
IT Polyacetylenes, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PREP (Preparation); PROC (Process); USES (Uses)
(polydiacetylenes, manuf. of metal-dispersed org. nonlinear optical laminate)
IT 7429-90-5, Aluminum, uses 7440-22-4, Silver, uses 7440-57-5, Gold, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(conductive micrograins; manuf. of metal-dispersed org. nonlinear optical laminate)
IT 76135-61-0 161253-99-2
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(org. nonlinear optical material; manuf. of metal-dispersed org. nonlinear optical laminate)
IT **104262-71-7P**
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(org. nonlinear optical material; manuf. of metal-dispersed org. nonlinear optical laminate)
IT 104239-44-3
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); TEM (Technical or engineered material use); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(prepn. of org. nonlinear optical material thin film by solid-phase polymn.)
IT 7631-86-9, Silica, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical

process); PROC (Process); USES (Uses)
(substrate; manuf. of metal-dispersed org. nonlinear optical laminate)

IT **104262-71-7P**
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(org. nonlinear optical material; manuf. of metal-dispersed org. nonlinear optical laminate)

RN 104262-71-7 HCAPLUS

CN Poly[1,2-bis(4-butyl-2,3,5,6-tetrafluorophenyl)-1-buten-3-yne-1,4-diyl] (9CI) (CA INDEX NAME)



L27 ANSWER 12 OF 16 HCAPLUS COPYRIGHT 2003 ACS

AN 1996:137944 HCAPLUS

DN 124:205842

TI Tangential-flow cold trap for residual reactive monomer **vapors** in **deposition** processes

IN Stewart, Jeffrey

PA USA

SO U.S., 6 pp.
CODEN: USXXAM

DT Patent

LA English

IC ICM B01D008-00

NCL 062055500

CC 47-4 (Apparatus and Plant Equipment)
Section cross-reference(s): 38, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5488833	A	19960206	US 1994-312097	19940926
PRAI	US 1994-312097		19940926		

AB The cold trap for condensing and **polymg.** residual **reactive** p-xylylene vapors in a parylene process for depositing poly(p-xylylene) coatings, e.g., on electronics, comprises a containment vessel with vertical sidewall defining a cylindrical inner surface of const. diam. A vapor inlet line enters the containment vessel tangentially at a point near the top end so that the vapor will impinge on the inner surface of the sidewall and flow in a rotational pattern in the vessel. The cold trap contains a cooling member which is positioned in

the containment vessel for facilitating the condensation and polymn. of the vapor.

ST xylylene vapor polymn removal cold trap; parylene pyrolytic deposition process cold trap; polyxylylene coating electronics vapor cold trap

IT Trapping apparatus
(cold; tangential-flow cold trap for residual reactive monomer **vapors** in **deposition** processes)

IT Electric apparatus
(tangential-flow cold trap for residual reactive monomer **vapors** in **deposition** processes)

IT Coating process
(app., cold-trap, poly(p-xylylene) coatings; tangential-flow cold trap for residual reactive monomer **vapors** in **deposition** processes)

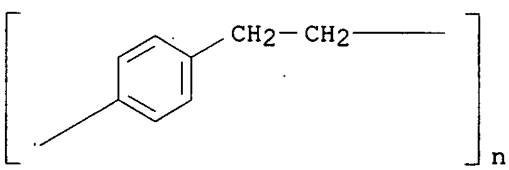
IT **25722-33-2**, Poly(p-xylylene)
RL: MSC (Miscellaneous)
(tangential-flow cold trap for residual reactive monomer **vapors** in **deposition** processes)

IT 3943-44-0, p-Xylylene
RL: REM (Removal or disposal); PROC (Process)
(tangential-flow cold trap for residual reactive monomer **vapors** in **deposition** processes)

IT **25722-33-2**, Poly(p-xylylene)
RL: MSC (Miscellaneous)
(tangential-flow cold trap for residual reactive monomer **vapors** in **deposition** processes)

RN 25722-33-2 HCAPLUS

CN Poly(1,4-phenylene-1,2-ethanediyl) (9CI) (CA INDEX NAME)



L27 ANSWER 13 OF 16 HCAPLUS COPYRIGHT 2003 ACS

AN 1993:449986 HCAPLUS

DN 119:49986

TI **Vapor deposition** polymerization of dispiro[2.2.2.2]deca-4,9-diene

AU Iwatsuki, Shouji; Kubo, Masataka; Hori, Yasutoshi

CS Fac. Eng., Mie Univ., Tsu, 514, Japan

SO Macromolecules (1993), 26(6), 1407-10
CODEN: MAMOBX; ISSN: 0024-9297

DT Journal

LA English

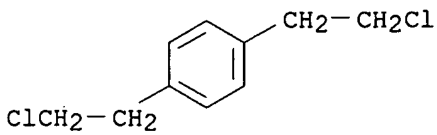
CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36

AB Dispiro[2.2.2.2]deca-4,9-diene (I) was sublimed under a pressure of 0.1 mmHg and was pyrolyzed at 500.degree.. When condensed on a glass surface at 20.degree., the pyrolyzed gas underwent spontaneous polymn. to give poly(1,4-phenylene-1,2-dimethylethylene) (II) as a film (.hivin.Mn = 3 .times. 104) in 10-20% yield and oligo(1,4-phenylenetetramethylene-co-1,4-phenylene-1,2-dimethylethylene) as an oil (.hivin.Mn = (2-4) .times. 102)

in 50-70% yield. It was proposed for the formation of the polymer film that the diradical intermediate generated in the pyrolysis of I underwent an isomerization reaction to form 7,8-dimethyl-1,4-benzoquinodimethane which polymd. spontaneously to give II film.
ST dispirodecadiene **vapor deposition** polymn; polyphenylenedimethylethylene prepn dispirodecadiene **vapor deposition**
IT Chains, chemical
(structure of, of polymer films prepd. via **vapor-deposition** of dispirodecadiene)
IT Polymerization
(**vapor-deposition**, of dispirodecadiene, structure of polymer films in relation to mechanism of)
IT 36262-33-6, Dispiro[2.2.2.2]deca-4,9-diene 148739-46-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(polymn. of, **vapor-deposition**, mechanism of, structure of polymer films in relation to)
IT 5140-03-4P, 1,4-Bis(2-hydroxyethyl)benzene 6781-43-7P, 1,4-Bis(1-hydroxyethyl)benzene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and dehydroxylation of)
IT 36076-26-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and redn. of)
IT 7379-84-2P 40959-74-8P, 1,4-Bis(1-chloroethyl)benzene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and **vapor-deposition** polymn. of)
IT **148739-42-8P** 148739-43-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of films of, via **vapor-deposition** polymn., structural characterization in relation to)
IT 7325-46-4, 1,4-Phenylenediacetic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with thionyl chloride and triethylamine)
IT 121-44-8, Triethylamine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of. with phenylenediacetic acid and thionyl chloride)
IT 7719-09-7, Thionyl chloride
RL: USES (Uses)
(reaction of. with phenylenediacetic acid and triethylamine)
IT 1009-61-6, p-Diacetylbenzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(redn. of)
IT **148739-42-8P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of films of, via **vapor-deposition** polymn., structural characterization in relation to)
RN 148739-42-8 HCAPLUS
CN Benzene, 1,4-bis(2-chloroethyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 7379-84-2
CMF C10 H12 Cl2



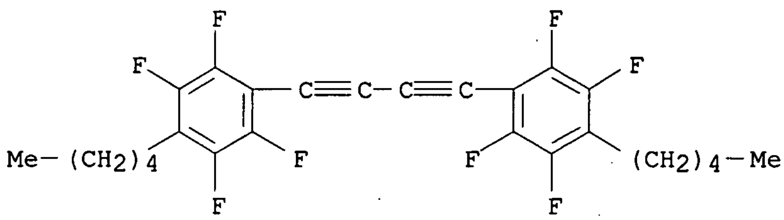
L27 ANSWER 14 OF 16 HCAPLUS COPYRIGHT 2003 ACS
AN 1988:439122 HCAPLUS
DN 109:39122
TI Fluorinated polydiacetylenes for oriented films
IN Muramatsu, Hiroshige; Ueda, Akio; Okuhara, Kunio; Kodaira, Kazuo; Itsubo, Akira; Kojima, Takashi; Miyabayashi, Mitsutaka
PA Agency of Industrial Sciences and Technology, Japan; Mitsubishi Petrochemical Co., Ltd.
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C08F038-00
ICS G02F001-01; H01B005-14
ICA G03C001-72; G03C001-74
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 73
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63041515	A2	19880222	JP 1986-186653	19860807
	JP 02040243	B4	19900911		
PRAI	JP 1986-186653		19860807		

OS MARPAT 109:39122
AB Title films useful for nonlinear optical devices, photoelec. switches, etc. have .gtoreq.3 x-ray diffraction peaks at Bragg angle 2.theta. = 2sin-1(n.lambda./2d) (n .gtoreq. 1; d = interplanar spacing; .lambda. = wavelength of x-ray). Thus, 10 mg 2,2',5,5'-tetrakis(trifluoromethyl)diphenyldiacetylene was **vapor-deposited** on a PMMA plate to give a 0.7 .mu. monomer film, which was UV irradiated for 10 min, giving a red polymer film, showing 7 diffraction peaks at 2.theta. 6.71, 13.40, 20.20, 27.05, 34.00, 41.10 and 48.35.degree.. X-ray diffraction of this film exhibited an induction of good crystallinity.
ST mol oriented film fluorinated polydiacetylene; crystallinity polydiacetylene mol oriented film
IT Films
(fluorinated polydiacetylenes, oriented, cryst.)
IT Polyacetylenes, uses and miscellaneous
RL: USES (Uses)
(polydiacetylenes, films, oriented, cryst.)
IT 101902-26-5P **104239-38-5P 104239-45-4P** 115235-43-3P
RL: PREP (Preparation)
(films, mol.-oriented, cryst., prepn. of)
IT **104239-38-5P 104239-45-4P**
RL: PREP (Preparation)
(films, mol.-oriented, cryst., prepn. of)
RN 104239-38-5 HCAPLUS
CN Benzene, 1,1'-(1,3-butadiyne-1,4-diyl)bis[2,3,5,6-tetrafluoro-4-pentyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

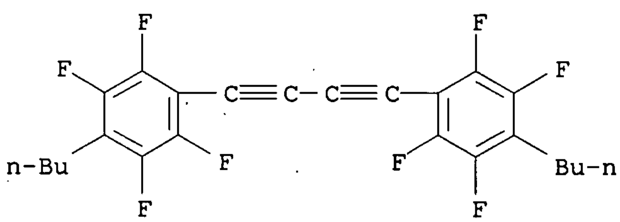
CRN 104239-37-4
CMF C26 H22 F8



RN 104239-45-4 HCAPLUS
CN Benzene, 1,1'-(1,3-butadiyne-1,4-diyl)bis[4-butyl-2,3,5,6-tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

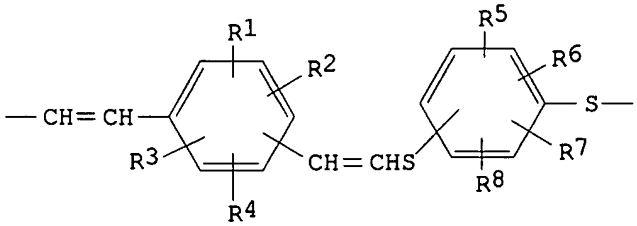
CRN 104239-44-3
CMF C24 H18 F8



L27 ANSWER 15 OF 16 HCAPLUS COPYRIGHT 2003 ACS
AN 1988:159088 HCAPLUS
DN 108:159088
TI Reversible optical recording on polythiophenylenes
IN Kobayashi, Hidekazu; Ohashi, Toyoji; Miyabayashi, Mitsutaka
PA Mitsubishi Petrochemical Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G03C005-00
ICS B41M005-26; G03C001-72
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62194250	A2	19870826	JP 1986-35004	19860221
	JP 05081020	B4	19931111		
PRAI	JP 1986-35004		19860221		

GI



I

AB Optical recording media having polymers of arom. biphenylene sulfide structure repeating unit I (R1-8 = H, C1-12 alkyl, halo, etc.) are irradiated with a light beam to write and to erase information by changing the optical characteristics of the polymer. The recording materials may be rewritable. Thus, p-diethynylbenzene-p-dimercaptobenzene copolymer was formed on a quartz glass substrate by **vapor deposition**
. The polymer showed reversible changes in its crystallinity by irradn. with light having different wavelengths.

ST rewritable optical recording; arom biphenylene sulfide optical recording; phenylene sulfide polymer optical recording; polythiophenylene rewritable optical recording

IT Crystallinity
Optical property
(of polythiophenylenes, change in, optical recording in relation to)

IT Recording materials
(optical, rewritable, arom. polythiophenylenes as)

IT 103105-66-4 **113880-64-1**
RL: USES (Uses)
(optical recording material, rewritable optical characteristics in relation to)

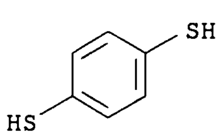
IT **113880-64-1**
RL: USES (Uses)
(optical recording material, rewritable optical characteristics in relation to)

RN 113880-64-1 HCAPLUS

CN 1,4-Benzenedithiol, polymer with 1,4-diethenylbenzene (9CI) (CA INDEX NAME)

CM 1

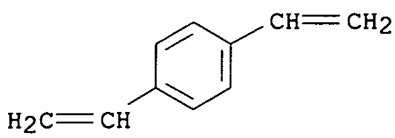
CRN 624-39-5
CMF C6 H6 S2



CM 2

CRN 105-06-6

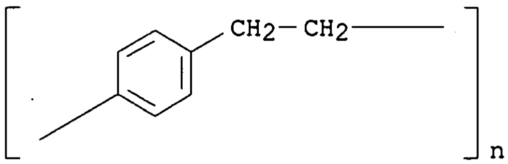
CMF C10 H10



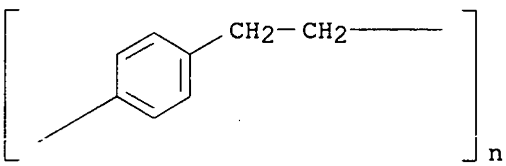
L27 ANSWER 16 OF 16 HCAPLUS COPYRIGHT 2003 ACS
AN 1985:472667 HCAPLUS
DN 103:72667
TI Polymeric film coating with continuous deposition pressure control
IN Riley, Thomas J.
PA USA
SO U.S., 6 pp. Division of U.S. 4,495,889.
CODEN: USXXAM
DT Patent
LA English
IC ICM B05D005-12
NCL 427008000
CC 42-2 (Coatings, Inks, and Related Products)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4518623	A	19850521	US 1984-604968	19840427
PRAI	US 1982-444486		19821124		

AB An app. for coating substrates with p-xylylene polymers by vapor-phase polymn. monitors the monomer vapor pressure after pyrolysis of the cyclic di-p-xylylene dimer, compares the measured pressure to a predetd. pressure needed to effect a complete vapor-phase **polymn. reaction**, and adjusts the temp. of the vaporization in response to variations between measured pressure and predetd. pressure. Thus, 49 g monochlorodi-p-xylylene cyclic dimer was vaporized in the above-described app. operating at 85 .mu. to coat a substrate in 3.7 h with a 10-20-k.ANG. film.
ST chlorinated polyxylylene coating app; vapor phase polymn coating app
IT Coating process
(vapor-phase-polymn., with xylylene polymers, app. for, continuous pressure control in)
IT **25722-33-2 25722-33-2D**, chlorinated **26591-48-0**
26591-48-0D, chlorinated
RL: USES (Uses)
(coating with, by **vapor**-phase-polymn.-**deposition**, app. for, continuous pressure control in)
IT **25722-33-2 25722-33-2D**, chlorinated **26591-48-0**
26591-48-0D, chlorinated
RL: USES (Uses)
(coating with, by **vapor**-phase-polymn.-**deposition**, app. for, continuous pressure control in)
RN 25722-33-2 HCAPLUS
CN Poly(1,4-phenylene-1,2-ethanediyl) (9CI) (CA INDEX NAME)



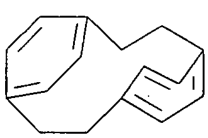
RN 25722-33-2 HCAPLUS
CN Poly(1,4-phenylene-1,2-ethanediyl) (9CI) (CA INDEX NAME)



RN 26591-48-0 HCAPLUS
CN Tricyclo[8.2.2.24,7]hexadeca-4,6,10,12,13,15-hexaene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1633-22-3
CMF C16 H16



RN 26591-48-0 HCAPLUS
CN Tricyclo[8.2.2.24,7]hexadeca-4,6,10,12,13,15-hexaene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1633-22-3
CMF C16 H16